

Honeywell

L-Series Color Camera

NTSC PAL

HCC334L

HCC334LX

HCC484L

HCC484LX

HCC335LX

HCC485LX

User Guide

Revisions

Issue	Date	Revisions
1.00	06/06	New document
1.01	08/06	Added 230V (HCC335LX, HCC485LX).
3	02/07	Updated document part no.; added warning to p. iii.

Warnings

Installation and servicing should be performed only by qualified and experienced personnel to conform to all local codes and to maintain your warranty.





WARNING! 12 VDC/24 VAC models require the use of CSA Certified/UL Listed Class 2 power adapters to ensure compliance with electrical safety standards.

Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

WEEE (Waste Electrical and Electronic Equipment).

Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Explanation of Graphical Symbols

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN		 THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THE UNIT.
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL			THIS SYMBOL INDICATES THAT IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS ACCOMPANY THIS UNIT.

FCC Compliance Statement

Information to the User: This equipment has been tested and found to comply with the limits for a Class A digital device. Pursuant to Part 15 of the FCC Rules, these limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Manufacturer's Declaration of Conformance

The manufacturer declares that the equipment supplied with this guide is compliant with the essential protection requirements of the EMC directive 89/336/EEC and the Low Voltage Directive LVD 73/23 EEC, conforming to the requirements of standards EN 55013 for emissions.

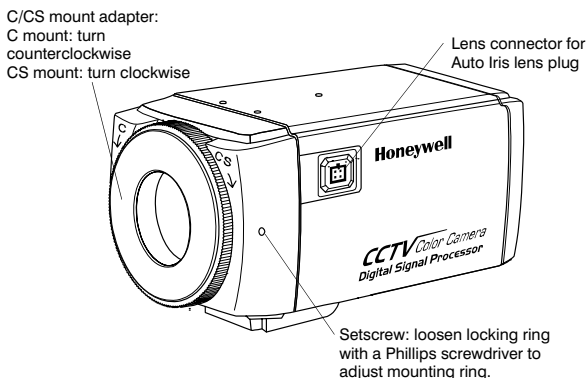
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Introduction

The Honeywell L-Series Color cameras are ideally suited for use in day-to-day surveillance applications. The L-Series cameras are designed for exceptional value and performance for everyday use. Their off-the-shelf feature set is designed for high picture quality in standard applications and they require little to no adjustment after installation.

Figure 1 Camera Overview



Features

- 1/3" CCD
- C/CS adjustable lens mount adapter
- Excellent signal-to-noise ratio of more than 50 dB
- Minimum illumination:
 - High Res — 0.4 lux (F1.2, 50 IRE, AGC ON)
 - Standard Res — 0.2 lux (F1.2, 50 IRE, AGC ON)
- 2-way Auto Iris: Video Iris (VSD) or Direct Drive (DC) Iris lens

Before You Begin

Please read this guide carefully before you install the L-Series Color camera.

Keep this guide for future reference.

Unpack Everything

Check that the items received match those listed on the order form and packing slip. The L-Series packing box should include, in addition to this User Guide:

- One L-Series Color camera
- One Auto Iris lens plug

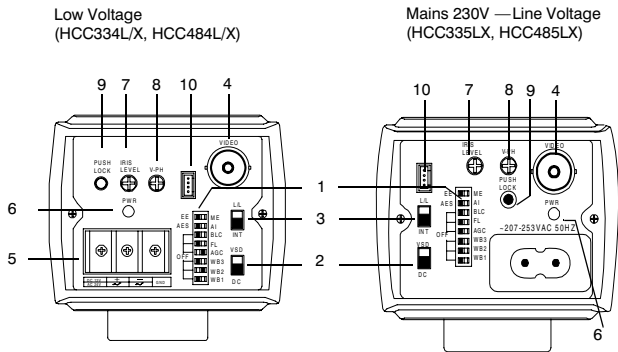
If any parts are missing or damaged, contact the dealer you purchased the camera from or call Honeywell Customer Service (see *Contact Information* on the back of this manual).

Note You will also require a Phillips screwdriver to complete the installation.

Camera Settings

Camera Functions

Figure 2 Camera Rear View



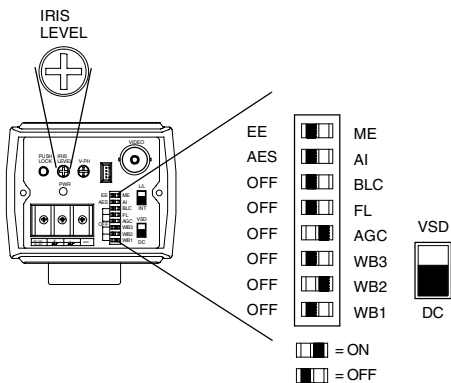
Legend

#	Description
1	DIP switches for mode settings (see <i>Figure 3</i>)
2	Auto Iris Lens select switch, VSD for Video or DC for Direct Drive
3	Sync select switch
4	Video output connector
5	Power input connector (24 VAC: 3 terminals)—Low Voltage model only
6	Power LED indicator
7	DC Iris level adjustment, for use with DC Iris lens
8	V-Phase adjustment, for use with Line lock
9	Push Lock in White Balance (WB) mode
10	EEPROM data setting for factory use only

Setting Up Your Camera

Figure 3 shows the factory set DIP switch settings. Automatic Gain Control (AGC) and Auto White Balance Control (AWC) are set **ON**.

Figure 3 Factory Set DIP Switch Settings



Selecting the Lens

Manual Lens

Set the EE/ME DIP switch on the rear of the camera (see *Figure 3*) to **EE**. Set the AES/AI switch to **AES**. EE and AES are the typical settings.

Vari-focal Auto Iris Lens

Vari-focal Auto Iris lenses (Direct Drive [DC] or Video Drive [VSD]) are connected to the camera via a 4-pin square socket located at the side of the camera. Set the AES/AI DIP switch to **AI**. EE and AI are the typical settings.

To set a different exposure, see *Exposure Mode on page 5*.

Direct Drive (DC) Lens

1. Set the VSD/DC switch on the rear of the camera to **DC**. Set the AES/AI DIP switch to **AI**.

2. Slowly turn the **LEVEL** potentiometer until the picture on the monitor is as clear as possible and is not too bright.

Video Drive (VSD) Lens

Set the VSD/DC switch on the rear of the camera (see *Figure 3*) to **VSD**.

Exposure Mode

Automatic Exposure Mode

The Electronic Exposure feature compensates for excessive light levels by automatically adjusting the shutter speed of the camera. Set the EE/ME switch to **EE** (recommended setting).

Manual Exposure Mode

Set the EE/ME switch to **ME**. This setting is typically used only in machine vision applications. The table below gives the shutter speeds for the switch settings.

		Switch Label			
		Shutter speed(s)	FL	BLC	AES/AI
EE		ME 1/50 (PAL) 1/60 (NTSC)	OFF	ON	OFF
			ON	ON	OFF
AES		1/100 (PAL)	ON	ON	OFF
OFF		1/120 (NTSC)	OFF	OFF	OFF
OFF		1/250	OFF	OFF	OFF
OFF		1/500	ON	OFF	OFF
OFF		1/1000	OFF	ON	ON
OFF		1/2000	ON	ON	ON
OFF		1/4000	OFF	OFF	ON
OFF		1/10000	ON	OFF	ON

LEGEND = ON
 = OFF

ME
AI
BLC
FL
AGC
WB3
WB2
WB1

Caution Before you adjust the shutter speed, it is important that you understand how the settings can affect the scene detail.

Backlight Compensation (BLC)

If there is excessive light (for example, a window exists in a scene), the camera tries to compensate by reducing the overall exposure, resulting in the areas surrounding the window becoming too dark. Turn the BLC switch **ON** to eliminate the silhouette effect.

Flickerless Mode (FL)











Set the FL switch to **ON** to remove the flicker in a picture. For PAL models, the shutter speed is 1/100 second; for NTSC models, the shutter speed is 1/120 second.

Automatic Gain Control (AGC)

This feature can improve picture quality when the level of scene illumination is low. When set to **OFF**, the gain is 11 dB. When set to **ON**, the gain is 30 dB.

Auto White Balance (AWB)

Auto white balance ensures that color integrity is maintained. To set the white balance, change the WB1, WB2, or WB3 switches as shown in the following table.

		WB1	WB2	WB3	AWB Mode	
		OFF	OFF	OFF	ATW Mode	
EE		ME	OFF	ON	OFF	AWC Mode
AES		AI	OFF	ON	ON	One Push Lock
OFF		BLC	ON	OFF	OFF	Indoor Fixed Mode (3200°K)
OFF		FL	ON	OFF	ON	Fluorescent Fixed Mode (4200°K)
OFF		AGC	ON	ON	OFF	User Fixed Mode (4700°K)
OFF		WB3	ON	ON	ON	Outdoor Fixed Mode (6300°K)
OFF		WB2	ON	ON	ON	Outdoor Fixed Mode (6300°K)
OFF		WB1	ON	ON	ON	Outdoor Fixed Mode (6300°K)
LEGEND		 = ON				
		 = OFF				

Auto Trace White Balance (ATW)

This mode covers a range of 2800°K to 8000°K. This mode is typically used for indoor applications.

Auto White Balance Control (AWC)

This mode covers a wider range of 2000°K to 10000°K and performs at a faster operating speed than ATW mode. This mode is typically used for outdoor applications or where variable lighting conditions exist.

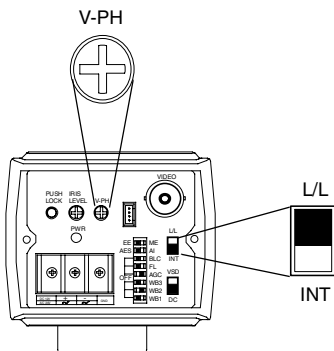
One Push Lock

Press **PUSH LOCK** on the rear of the camera to calibrate the white balance for the current scene. This mode is typically used for scenes with constant lighting conditions.

Synchronization Selection (LL/INT)

This switch selects the synchronization mode of the camera. When the camera is connected to an AC supply, the Line lock (LL) mode is used to lock the camera's frame rate to the frequency so that each camera in the system is triggered at the same point on the supply's AC cycle. The default setting is LL.

WARNING! The LL/INT switch must be set to INT when operating from 12 VDC.



Line Lock Phase Adjustment Potentiometer

When the camera is in Line lock mode, it is possible to adjust the point on the AC cycle at which the camera triggers. This feature allows for synchronization of cameras that are connected to different phases.

The V-PHASE adjustment potentiometer allows the line lock phase trigger point to be adjusted by 270° . Rotating the potentiometer clockwise advances the trigger point and turning it counterclockwise retards the trigger point. The factory default setting is the zero crossing point. If all cameras in a system are on the same phase then no line lock phase adjustment should be made.

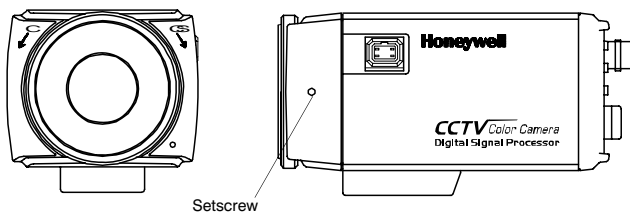
Lens Installation

Adjusting the Back Focus

The back focus adjustment is accessible at the front end of the camera housing to adjust the back focal length or picture focus.

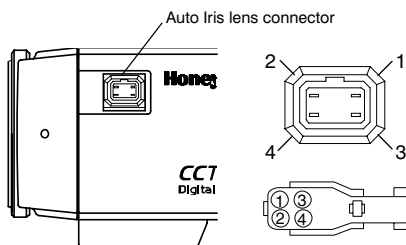
The range of adjustment allows both C- and CS-mount lenses to be used without the need for a spacer ring.

Figure 4 C/CS Mount



1. Loosen the setscrew with a Phillips screwdriver.
2. Adjust the focus ring to focus the picture.
3. Retighten the setscrew.

Figure 5 DC and VSD Lens Pin Definition



Pin	DC (Direct Drive) lens	Video (VSD) lens
1	CTRL -	Power (+12V)
2	CTRL +	NC
3	DRV +	Video Signal
4	DRV -	GND
Set the select switch to DC		Set the select switch to VSD

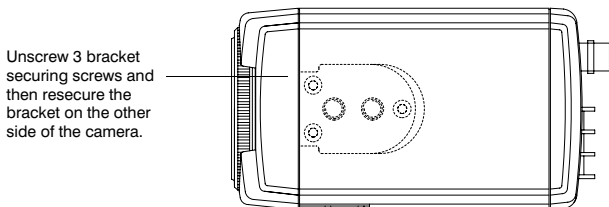
Completing the Installation

Mounting the Camera

Mounting points are provided on the top of the camera for mounting the camera on a bracket or tripod. They are designed to accept standard sized 1/4 x 20 mounting screws. This bracket can be unscrewed and mounted onto the opposite side of the camera, depending on your application. The mounting bracket must be capable of supporting the weight of the camera and its lens.

Note Some installation codes dictate that the mounting bracket must be capable of supporting up to four times the combined weight of the camera and lens.

Figure 6 **Camera Mount**



Connecting the Camera

1. Connect the **VIDEO** connector on the rear of the camera to the video-in connector on your monitor.
2. Connect the camera to a power supply appropriate for your installation.

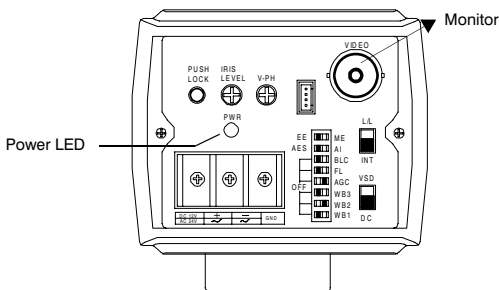
HCC334L/X, HCC484L/LX: 12 VDC or 24 VAC power supply

HCC335LX, HCC485LX: 230V power supply

3. Plug in the power supply. The power (**PWR**) LED illuminates to show that the camera is receiving power. If it does not illuminate, check the connections and the power source.

Figure 7 Camera Connections

Low voltage model shown
(HCC334L/X, HCC484L/X)



Warranty and Service

Subject to the terms and conditions listed on the Product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective product returned prepaid. In the event you have a problem with any Honeywell product, please call Customer Service at 1.800.796.CCTV (North America only) for assistance or to request a **Return Merchandise**

Authorization (RMA) number. For Europe and the United Kingdom, please contact your Honeywell dealer.

Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative. Prior authorization **must** be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused.**

Specifications

Note These specifications refer to all models, except where otherwise noted.

	HCC334L	HCC334LX HCC335LX	HCC484L	HCC484LX HCC485LX
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Operational

Image Sensor:	1/3" Super HAD CCD			
Video Standard:	NTSC	PAL	NTSC	PAL
Scanning System:	525 lines, 2:1 interlace	625 lines, 2:1 interlace	525 lines, 2:1 interlace	625 lines, 2:1 interlace
Number of Pixels (H x V):	510 x 492	500 x 582	768 x 494	752 x 582
Minimum Illumination:	< 0.2 lux @ F1.2 (50 IRE, AGC ON)		< 0.4 lux @ F1.2 (50 IRE, AGC ON)	
Horizontal Resolution:	330 TVL	330 TVL	480 TVL	480 TVL

Video Output:	1 Vp-p @ 75 Ohms			
Sync System:	Internal/Line lock			
S/N Ratio:	> 50 dB			
Auto Gain Control (AGC):	On (30 dB)/Off (11 dB)			
ALC:	EE/VSD/DC			
Automatic Electronic Shutter (AES):	1/60 - 1/100,000 sec	1/50 - 1/100,000 sec	1/60 - 1/100,000 sec	1/50 - 1/100,000 sec
Lens Mount:	C/CS mount (adjustable)			
White Balance (AWB):	ATW/AWC/One Push Lock/Indoor/Outdoor/Fluorescent/User			
BLC:	On/Off			
Gamma:	0.45			

Electrical

Input Voltage:	HCC334L/LX, HCC484L/LX: 12 VDC/24 VAC HCC335LX, HCC485LX: 230 VAC			
Input Voltage Range:	HCC334L/LX, HCC484L/LX: 11 - 16 VDC, 17 - 28 VAC HCC335LX, HCC485LX: 230 VAC \pm 10%			
Power Consumption:	HCC334L/LX, HCC484L/LX: 3.5 W HCC335LX, HCC485LX: 4.2 W (max)			

Mechanical

Dimension: (W x H x D)	HCC334L/LX, HCC484L/LX: 2.68 x 2.2 x 4.72 in. (68 x 56 x 120 mm) HCC335LX, HCC485LX: 2.68 x 2.2 x 5.51 in. (68 x 56 x 140 mm)			
Weight:	HCC334L/LX, HCC484L/LX: 0.84 lb (.380 kg) HCC335LX, HCC485LX: 0.90 lb (.410 kg)			

Environmental

Temperature:	Operating: 14°F to 122°F (-10°C to +50°C) Storage: -4°F to 158°F (-20°C to +70°C)			
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Regulatory

Emissions:	FCC, CE (EN55013)			
Immunity:	CE (EN50130-4)			
Safety:	EU: 73/23/EEC LVD			

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